IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Knox et al.
Application No.	:	09/869,630
Filing Date	:	September 21, 2001
Art Unit	:	1641
Title	:	NMR Spectroscopy Method
Examiner	:	Ann Y Lam
Docket No.	:	PZ9847
Confirmation No.		5704

Mail Stop Reply Brief – Patents
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REPLY BRIEF

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I. STATUS OF CLAIMS

Claims 1 and 3-10 are pending in this application. The Examiner has rejected all of these claims. Appellants are appealing the rejections of Claims 1 and 3-10.

II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issue for review in this appeal arises from an Examiner's Answer that was mailed on October17, 2007.

The Examiner rejects claims 1and 3-10 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,015,565 ("Rose") in view of U.S. Patent No. 6,426,058 ("Pines"). This rejection is respectfully traversed.

III. ARGUMENT

Appellants respectfully point out here that they are only addressing the Examiner's Answer ("Answer")dated October 17, 2007 herein. Please see Appellants Appeal Brief dated May 17, 2007 for a complete Responsive Brief.

Appellants respectfully request that The Board of Patent Appeals and Interferences ("Board") should reverse the Examiner's rejection based on the Examiner's Answer for the reasons set forth below.

On page3 of the Examiner Answer ("Answer") dated October 17, 2007, the Examiner asserts that Rose discloses the invention substantially as claimed apart from labeling the biological molecule with hyperpolarized 129-Xe to enhance NMR detection. Appellants completely disagree. Claim 1 of the present invention encompasses a NMR procedure wherein a biological molecule is labeled with hyperpolarized 129-Xe and wherein the signal observed is that of the hyperpolarized 129-Xe. Claim 1 of the present invention therefore relates to a method wherein something other than the biological molecule is observed. The NMR taught by Rose is a standard NMR procedure that observes the atoms in a biological molecule. Appellants therefore submit that claim 1 of the present invention differs from the teachings of Rose in this important aspect. Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. Uniroyal, *Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051 (Fed. Cir. 1988). (emphasis added). The claims of the present invention can not then be merely assumed

obvious from the Examiner's subjective view point. Appellants note that "the prior art itself must provide a motivation or reason for the worker in the art, without the benefit of the Applicant's specification, to make necessary changes in the reference device". See, *Ex parte Chicago Rawhide Manufacturing Co.*, 226 U.S.P.Q. 438 (PTO Bd. App. 1984).

Furthermore, Appellants wish to point out that Pines teaches an NMR spectroscopy method for determining the structure and conformation of molecules. The signal from the atoms of the molecule being examined is enhanced by the transfer of polarization from a hyperpolarized noble gas to the molecule. As in the case of Rose, the method of Pines is used for determining the structure and conformation of molecules observing the molecules in the molecule and not the signal of the hyperpolarized noble gas. The teachings of Pines combined with those of Rose therefore do not lead in an obvious manner to the invention of present claims. Claims 1 and 10 are therefore believed to be unobvious over Rose in view of Pines. Claims 3-9, by virtue of their dependence on claim 1 are believed to be unobvious over Rose in view of Pines.

Even assuming, *arguendo*, that the references are properly combinable; Appellants respectfully submit that any such combination would teach away from the present invention. 'Teaching away' simply means teaching a solution that would not lead to the claimed subject matter. As noted by the Federal Circuit:

> A reference may be said to teach away when a person of ordinary skill, upon [examining] the reference would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. (emphasis added).

Para-Ordnance Mfg. v. SGS Importers Int'l, 73 F.3d 1085 (Fed. Cir. 1995).

Appellants respectfully submit that the mere fact that a reference may suggest an 'improvement' does not dictate that the improvement will direct one to all other 'improvements'. That is, one improvement can teach away from another, as the two improvements may diverge from each other in their teachings. The *Para-Ordnance* decision (above) clearly states that teaching away does not require a negative teaching in the prior art, the prior art need only teach other, divergent, solutions to be deemed to teach away from an invention.

Thus, by teaching positively towards certain embodiments or features as being important or preferred, the art provides a motivation for the person skilled in the art to go in a particular direction. If that direction leads towards subject matter outside the scope of the claims at issue, then it constitutes a "teaching away". Appellants maintain that the person skilled in the art, even if assumed to be contemplating improvements of Rose, would focus on the specific teachings in Rose of embodiments taught to be important, and be motivated to improve those elements. Rose teaches that combining a pharmaceutical candidate with glycoprotein B and thereafter detecting whether the pharmaceutical candidate has bound to the active site of glycoprotein B to be important. Again, per *Baird*, it is well settled that a reference must be considered not just for what it expressly teaches, but also for what it fairly suggests to one who is unaware of the claimed invention. *In re Baird supra*. Rose is clearly directed to the use of combining a pharmaceutical candidate with glycoprotein B, which is described at length from Column 5, line 8 to Column 64, line 55. That is, Rose devotes about 59 columns of text to what is the essence of his invention, the use of combining a pharmaceutical candidate with

glycoprotein B. Rose does not teach, suggest, or disclose using NMR spectrum and/or any image observable during the course of the reaction between the candidate and glycoprotein B, as would be required if either of the methods of claims 1 or 10 of the present invention were being used. Instead, the detection step of Rose is temporally separate to the reaction itself.
are properly combinable; Appellants respectfully submit that any such combination would teach away from the present invention. 'Teaching away' simply means teaching a solution that would not lead to the claimed subject matter.

Appellants respectfully submit again that Kuhn clearly states that it is highly undesirable to reproduce blood flowing around the device within the artery in high-resolution MR images, (see column 4, lines 37-41). Kuhn thereby teaches away from visualizing the device by enhancing the relaxation properties of the blood relative to the invasive device. Kuhn does not disclose, teach, or suggest using a contrast agent to enhance the relaxation properties of the blood surrounding the device.

Appellants therefore respectfully request that the Board should reverse the Examiner's obviousness rejection of claims 1 and 3-10.

IV. CONCLUSION

In view of the foregoing, Appellants respectfully request that the Board reverse the rejections of Claims 1 and 3-10 as set forth in the Office Action mailed October 17, 2007, that the Board allow the pending claims since they are in condition for allowance, and that the Board grant any other relief as it deems proper.

Dated: October 17, 2007

Respectfully submitted,

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